OTAY BUSINESS PARK OFF-SITE BIOLOGICAL OPEN SPACE AT LONESTAR RIDGE

RESOURCE MANAGEMENT PLAN
TM 5505

June 23, 2010

Prepared for the County of San Diego

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Otay Business Park Off-site Biological Open Space at Lonestar Ridge Resource Management Plan

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LIST OF ACRONYMS

AMSL	above mean sea level
BOS	Biological Open Space
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CDFG	California Department of Fish and Game
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
County	County of San Diego
DPLU	Director of Planning and Land Use
DPR	Director of Parks and Recreation
DPW	Director of Public Works
EOMSP	East Otay Mesa Specific Plan
HELIX	HELIX Environmental Planning, Inc.
HOA	Homeowners Association
Lonestar Parcels	Lonestar Ranch Property
MHPA	Multi-Habitat Planning Area
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSCP	Multiple Species Conservation Program
PAMA	Pre-Approved Mitigation Area
PAR	Property Analysis Record
QCB	Quino checkerspot butterfly
RMP	Resource Management Plan
RWQCB	Regional Water Quality Control Board
TM	Tentative Map
USFWS	U.S Fish and Wildlife Service

1.0 INTRODUCTION

This Resource Management Plan (RMP) has been prepared for the proposed 68.72-acre Otay Business Park Off-Site Biological Open Space (BOS) preserve at Lonestar Ridge in accordance with mitigation requirements identified in the Otay Business Park biological technical report prepared by HELIX Environmental Planning, Inc. (HELIX 2010a). This RMP provides direction for the permanent preservation and management of the BOS preserve in accordance with County of San Diego (County) regulations.

1.1 PURPOSE OF RESOURCE MANAGEMENT PLAN

The purpose of this RMP is to provide guidance to ensure preservation of existing and enhanced native habitats and long-term management of the BOS. This RMP:

1. Guides management of vegetation communities and habitats, plant and animal species, cultural resources, and programs described herein to protect and, where appropriate, enhance biological and cultural resources;
2. Serves as a descriptive inventory of vegetation communities and plant and animal species that occur within the BOS;
3. Serves as a descriptive inventory of archaeological and/or historical resources that occur within the BOS;
4. Establishes the baseline conditions from which adaptive management will be determined and success will be measured; and
5. Provides an overview of the operation, maintenance, administrative, and personnel requirements to implement management goals, and serves as a budget planning aid.

The details of this conceptual plan may be modified when the Final RMP is prepared and submitted to the County for approval. The County will review the Final RMP to ensure that it meets the specified Purpose and Objectives.

The Otay Business Park project site is a Tentative Map (TM) 5505 for land designated for Mixed Industrial use in Subarea 2 of the East Otay Mesa Specific Plan (EOMSP). The TM will subdivide the 161.6-acre property into 59 industrial lots, 2 detention basin lots (Detention Basins A and B), a 1-acre lot set aside for a sewer pump station, and approximately 8.90 acres provided as realigned drainage channel and on-site open space.

Project development would impact 175.31 acres including impacts to 0.24 acre of vernal/road pool, 0.01 acre of freshwater marsh, 0.19 acre of saltgrass grassland, 163.41 acres of non-native grassland, 10.19 acres of disturbed habitat, and 1.27 acres of developed land.

All the sensitive plants recorded on the project site will be impacted by the proposed development, including small-flowered morning-glory (*Convolvulus simulans*; 5 individuals), variegated dudleya (*Dudleya variegata*; approximately 3,465 individuals), San Diego button-celery (*Eryngium aristulatum* var. *parishii*; 3 individuals), San Diego barrel cactus (*Ferocactus viridescens*; 31 individuals), chocolate lily (*Fritillaria biflora*; 4 individuals), San Diego marsh-elder (*Iva hayesiana*; 11 individuals), spreading navarretia (*Navarretia fossalis*; 3 individuals), and one location supporting ashy spike-moss (*Selaginella cinerascens*).

The project applicant proposes to impact all of the sensitive animal species recorded on the project site, including San Diego fairy shrimp (*Branchinecta sandiegonensis*), Riverside fairy shrimp (*Streptocephalus woottoni*), Quino checkerspot butterfly (*Euphydryas editha quino*; [QCB] 1 individual observed in 2005), western spadefoot (*Spea hammondii*; 1 individual on site and 1 off site), grasshopper sparrow (*Ammodramus savannarum*; 1 individual), golden eagle (*Aquila chrysaetos*; foraging habitat), burrowing owl (*Athene cunicularia*; 7 pairs and 163.53 acres of occupied habitat), northern harrier (*Circus cyaneus*; 1 individual), white-tailed kite (*Elanus leucurus*; 1 individual), California horned lark (*Eremophila alpestris*; 1 individual on site and 1 off site), and loggerhead shrike (*Lanius ludovicianus;* 1 individual). Off-site impacts to burrowing owl pairs will occur just off site to the north of the proposed project site.

Preservation of 68.72 acres within the Lonestar Ranch Property (Lonestar Parcels) is covered under this RMP. This land is mostly non-native grassland and is designated as San Diego Fairy Shrimp Critical Habitat. In addition, preservation of 8.90 acres will occur on the project site (HELIX 2010b) and 81.73 acres of preservation will occur off of Otay Mesa (RMP to be prepared).

1.1.1 Conditions and/or Mitigation Measures that Require an RMP

This RMP satisfies County requirements for public review of the project pursuant to the California Environmental Quality Act and conditions that will be part of the Resolution of Approval. This RMP is also being submitted to the U.S. Army Corps of Engineers (Corps) and Regional Water Quality Control Board (RWQCB) as part of the permit application package. Project conditions requiring this RMP include mitigation for impacts to drainages, non-native grasslands, sensitive plants (small-flowered morning-glory, variegated dudleya, San Diego button-celery, San Diego barrel cactus, chocolate lily, San Diego marsh-elder, and spreading navarretia), and sensitive animals (San Diego fairy shrimp, Riverside fairy shrimp, QCB, western spadefoot, grasshopper sparrow, golden eagle, burrowing owl, northern harrier, white-tailed kite, California horned lark, and loggerhead shrike).

1.1.2 Agency Review and Coordination

A copy of the final RMP will be submitted to the U.S Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) for approval.

2.0 IMPLEMENTATION

2.1 RESOURCE MANAGER QUALIFICATIONS AND RESPONSIBLE PARTIES

Proposed Resource Manager:

The resource manager shall be one of the following:

- Conservancy group
- Natural resources land manager

- Natural resources consultant
- County Department of Parks and Recreation
- County Department of Public Works
- Federal or State Wildlife Agency (U.S. Fish and Wildlife Service, California Department of Fish and Game)
- Federal Land Manager such as Bureau of Land Management
- City Land Managers, including but not limited to Department of Parks and Recreation, Watershed Management or Department of Public Works.

The resource manager shall be approved in writing by the Director of Planning and Land Use (DPLU), the Director of Public Works (DPW), or the Director of Parks and Recreation (DPR). Any change in the designated resource manager shall also be approved in writing by the approving director. Appropriate qualifications for resource managers include, but are not limited to:

- Ability to carry out habitat monitoring or mitigation activities;
- Fiscal stability, including preparation of an operational budget (using an appropriate analysis technique) for the management of this RMP;
- Have at least 1 staff member with a biological, ecological, or wildlife management degree from an accredited college or university, or have a Memorandum of Understanding (MOU) with a qualified person with such a degree;
- If cultural sites are present, have a cultural resource professional on staff or a MOU with cultural consultant; and
- Experience with habitat and cultural resource management in southern California.

Proposed Land Owner:

Fee title of all separate BOS may be held by the Homeowners Association (HOA), or transferred to the Resource Manager or other appropriate landowner (e.g., land trust, conservancy, or public agency).

All BOS and/or conservation easements must be recorded prior to initiation of project impacts. Management responsibility for the 68.72 acres of land dedicated as off-site BOS at Lonestar Ridge will begin upon completion of the Vernal Pool Preserve Restoration Plan for Otay Business Park (HELIX 2010c).

Proposed Easement Holder:

If the land is transferred in fee title to any non-governmental entity, a Biological Open Space Easement or Conservation Easement dedication must be recorded. This easement should include the County but may also include other appropriate responsible agencies as defined under Section 815 of the California Civil Code as a grantee or third-party beneficiary. If the land is transferred to the County or other public conservation entity, no easement dedication is necessary.

Restoration Entity:

If revegetation/restoration activities are required, management responsibility for the revegetation/ restoration area shall remain with the restoration entity until restoration/revegetation is

completed. Upon County/Agency acceptance of the revegetated/restored area, management responsibility for the revegetation/restoration area will be transferred to the resource manager according to the Vernal Pool Preserve Restoration Plan (HELIX 2010c).

2.2 FINANCIAL RESPONSIBILITY/MECHANISM

Acceptable financial mechanisms include the following:

- Special District. Formation of a Lighting and Landscape District or Zone, or Community Facility District as determined appropriate by the Director of DPLU, DPW or DPR. If the developer desires DPR to manage the land, the following criteria must be met:
  a. The land must be located inside a Pre-Approved Mitigation Area (PAMA) or proposed PAMA, or otherwise deemed acceptable by DPR.
  b. The land must allow for public access.
  c. The land must allow for passive recreational opportunities such as a trails system.

- Endowment. A one-time non-wasting endowment, which is tied to the property, to be used by the resource manager to implement the RMP.

- Other acceptable types of mechanisms including annual fees, to be approved by the Director of DPLU, DPW or DPR.

- Transfer of ownership to existing entity (e.g. Borrego Foundation, Cleveland National Forest).

The project applicant is responsible for all RMP funding requirements, including direct funds to support the RMP start-up tasks as well as either an on-going funding source, or a one-time non-wasting endowment, which is tied to the property to fund long-term RMP implementation. It is currently anticipated that long-term management funding will be provided through an endowment provided by the project applicant. Start-up tasks include fence installation and posting of signage along the western boundary along State Route (SR)-125 and along the northern boundary of the 68.72-acre BOS parcel, as well as data base compilation for the BOS. Long-term tasks involve the management and maintenance of the preserve in perpetuity, including habitat monitoring and mapping, exotic species control, and general monitoring and reporting. These habitat management tasks commence immediately upon completion of the Vernal Pool Preserve Restoration Plan for Otay Business Park (HELIX 2010c).

2.3 CONCEPTUAL COST ESTIMATE

A Property Analysis Record (PAR) and cost estimate will be prepared for the 68.72-acre BOS when a Resource Manager has been identified. Table 1 provides an estimate of time required for tasks.

Table 1 RESOURCE MANAGEMENT TASKS			
Check if applies	**Tasks**	**Frequency (times per year)**	**Hours required per year***
BIOLOGICAL TASKS			
X	Baseline inventory of resources (if original inventory is over 5 years old)*	One time	8
X	Update biological mapping*	Once every 5_years	1
X	Update aerial photography	Once every 5 years	1
X	Removal of invasive species*	As needed; anticipated 2 times per year	100
X	Predator control	As needed	16
N/A	Habitat Restoration / Installation	--	--
N/A	Habitat Restoration / Monitoring and Management	--	--
X	Poaching control	As needed	4
X	Species Surveys (include a separate line for each species)		
X	Sensitive Plant Species Monitoring	1 out of every 5 years	8
X	Coastal California gnatcatcher Surveys	2 out of every 5 years	14
X	Fairy Shrimp Surveys	2 out of every 5 years	20
	Species management (include a separate line for each specific task)		
X	Sensitive Plant Species	As needed	8
X	Coastal California gnatcatcher	As needed	8
X	Fairy Shrimp	As needed	8
N/A	Noise management, if required	--	--
X	For lands within the MSCP and outside PAMA, consult Table 3-5 of the MSCP Plan for required biological resource monitoring	As needed	8
	Other		--
CULTURAL RESOURCES TASKS			
X	Monitoring	Quarterly	8
X	Stewardship	Quarterly	8
OPERATIONS, MAINTENANCE AND ADMINISTRATION TASKS			
X	Establish and maintain database and analysis of data	Annually	8
X	Write and submit annual report to County*	Annually	8
X	Review fees for County review of annual report*	Annually	4

Table 1 (cont.) **RESOURCE MANAGEMENT TASKS**			
Check if applies	**Tasks**	**Frequency (times per year)**	**Hours required per year***
OPERATIONS, MAINTENANCE AND ADMINISTRATION TASKS (cont.)			
X	Review and if necessary, update management plan*	Every 5 years	5
X	Construct permanent signs	One time	16
X	Replace signs	As needed	8
X	Construct permanent fencing/gates	One time	40
X	Maintain permanent fencing/gates	As needed	8
X	Remove trash and debris*	Quarterly	16
X	Coordinate with DEH and Sheriff	As needed	4
X	Maintain access road	As needed	4
N/A	Install stormwater BMPs	--	--
N/A	Maintain stormwater BMPs	--	--
N/A	Restore Built Structure	--	--
N/A	Maintain Built Structure	--	--
N/A	Maintain regular office hours	--	--
N/A	Inspect and service heavy equipment and vehicles	--	--
N/A	Inspect and repair buildings, residences and structures	--	--
N/A	Inspect and maintain fuel tanks	--	--
N/A	Coordinate with utility providers and easement holders	--	--
N/A	Manage hydrology (as required)	--	--
X	Coordinate with law enforcement and emergency services (e.g., fire)	As needed	4
X	Coordinate with adjacent land managers	As needed	4
X	Remove graffiti and repair vandalism	Quarterly	16
X	Maintain Confidentiality of Cultural Site Locations	Ongoing	4
N/A	Other	--	--

Table 1 (cont.) **RESOURCE MANAGEMENT TASKS**			
Check if applies	**Tasks**	**Frequency (times per year)**	**Hours required per year***
PUBLIC USE TASKS			
N/A	Construct trail(s)	N/A	--
N/A	Monitor, maintain/repair trails	N/A	--
N/A	Control public access	N/A	--
N/A	Provide Ranger patrol	N/A	--
N/A	Provide visitor/interpretive services	N/A	--
N/A	Manage fishing and/or hunting program	N/A	--
N/A	Provide Neighbor Education - Community Partnership	N/A	--
N/A	Prepare and reproduce trail maps and interpretative materials.	N/A	--
N/A	If HOA or similar is funding management, provide annual presentation to HOA	N/A	--
N/A	Coordinate volunteer services	N/A	--
N/A	Provide emergency services access/ response planning	N/A	--
N/A	Other	N/A	--
FIRE MANAGEMENT TASKS			
X	Coordinate with applicable fire agencies and access (gate keys, etc.) for these agencies	As needed	8
N/A	Plan fire evacuation for public use areas	--	--
N/A	Protect areas with high biological importance	--	--
N/A	Hand-clear vegetation	--	--
N/A	Mow vegetation	--	--
POST-FIRE TASKS			
N/A	Control post-fire erosion	--	--
N/A	Remove post-fire sediment	--	--
N/A	Reseed after fire	--	--
N/A	Replant after fire	--	--
	TOTAL	--	**377**

*Hours and costs to be determined by Resource Manager and depicted in the PAR

2.4 REPORTING REQUIREMENTS

An RMP Annual Report will be submitted to the County (and resource agencies, as applicable), along with the submittal fee to cover County staff review time. Annual reports shall discuss the previous year's management and monitoring as well as management/monitoring anticipated for the upcoming year. The Annual Report shall provide a concise but complete summary of management and monitoring methods, identify any new management issues, and address the success or failure of management approaches (based on monitoring). The report shall include a summary of changes from baseline or previous year conditions for species and habitats, and address any monitoring and management limitations, including weather (e.g., drought). The report shall also address any management (changes) resulting from previous monitoring results and provide a methodology for measuring the success of adaptive management. For new sensitive species observations or significant changes to previously reported species, the annual report shall include copies of completed California Natural Diversity Database (CNDDB) forms with evidence that they have been submitted to the State. The report shall also include copies of invasive plant species forms submitted to the State or County.

A fee will be collected by DPLU upon submittal of the Annual Report for staff's review time. The RMP may also be subject to an ongoing deposit account for staff to address management challenges as they arise. Deposit accounts, if applicable, are replenished to a defined level as necessary.

2.5 MEMORANDUM OF AGREEMENT (MOA)

For RMPs associated with discretionary projects, the County will require a Memorandum of Agreement (MOA) with the applicant. The agreement will be executed when the County accepts the final RMP. The MOA will state that the applicant agrees to implement the RMP and provide perpetual funding. The MOA shall also provide a mechanism for the funds to transfer to the County in the event of the failure of the resource manager to meet the goals of the RMP. The MOA will specify that RMP funding or funding mechanism be established prior to the following milestones:

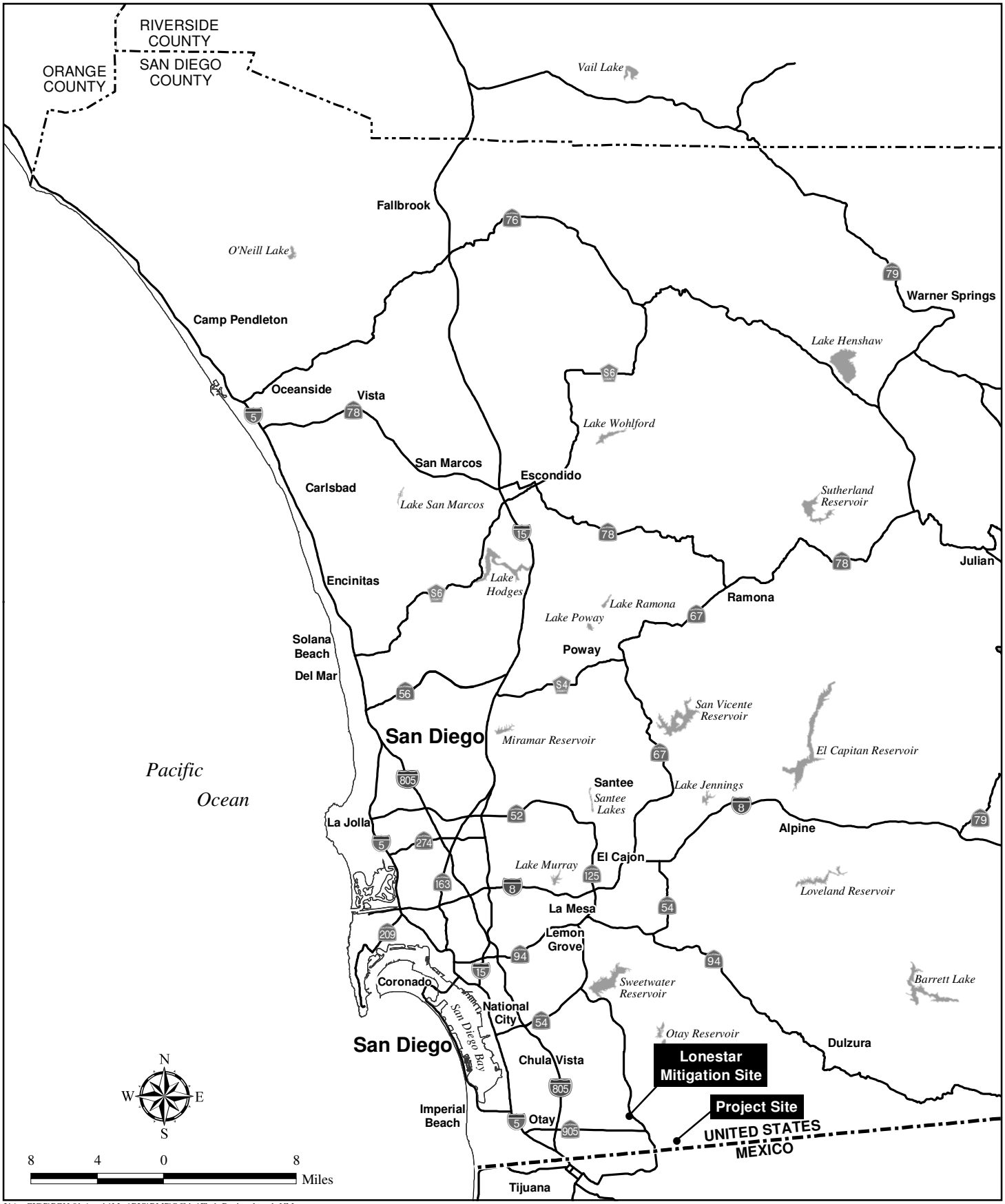
- For subdivisions, prior to the approval of grading or improvement plans, or prior to approval of the Parcel/Final Map, whichever is first;

- For permits, prior to construction or use of the property in reliance on the permit.

3.0 PROPERTY DESCRIPTION

3.1 LEGAL AND GEOGRAPHICAL DESCRIPTION

The Otay Business Park off-site BOS at Lonestar Ridge is located in the southern portion of San Diego County, north of SR-905 (Figure 1) and directly east of SR-125. Lonestar Ridge is located on 272.7 acres (excluding SR-125 lands) within the City of San Diego south of the Otay River Valley, northeast of Brown Field Airport (Figure 2). The northern boundary of the site is also the boundary separating the site from the City of Chula Vista and County. The BOS consists of 68.72



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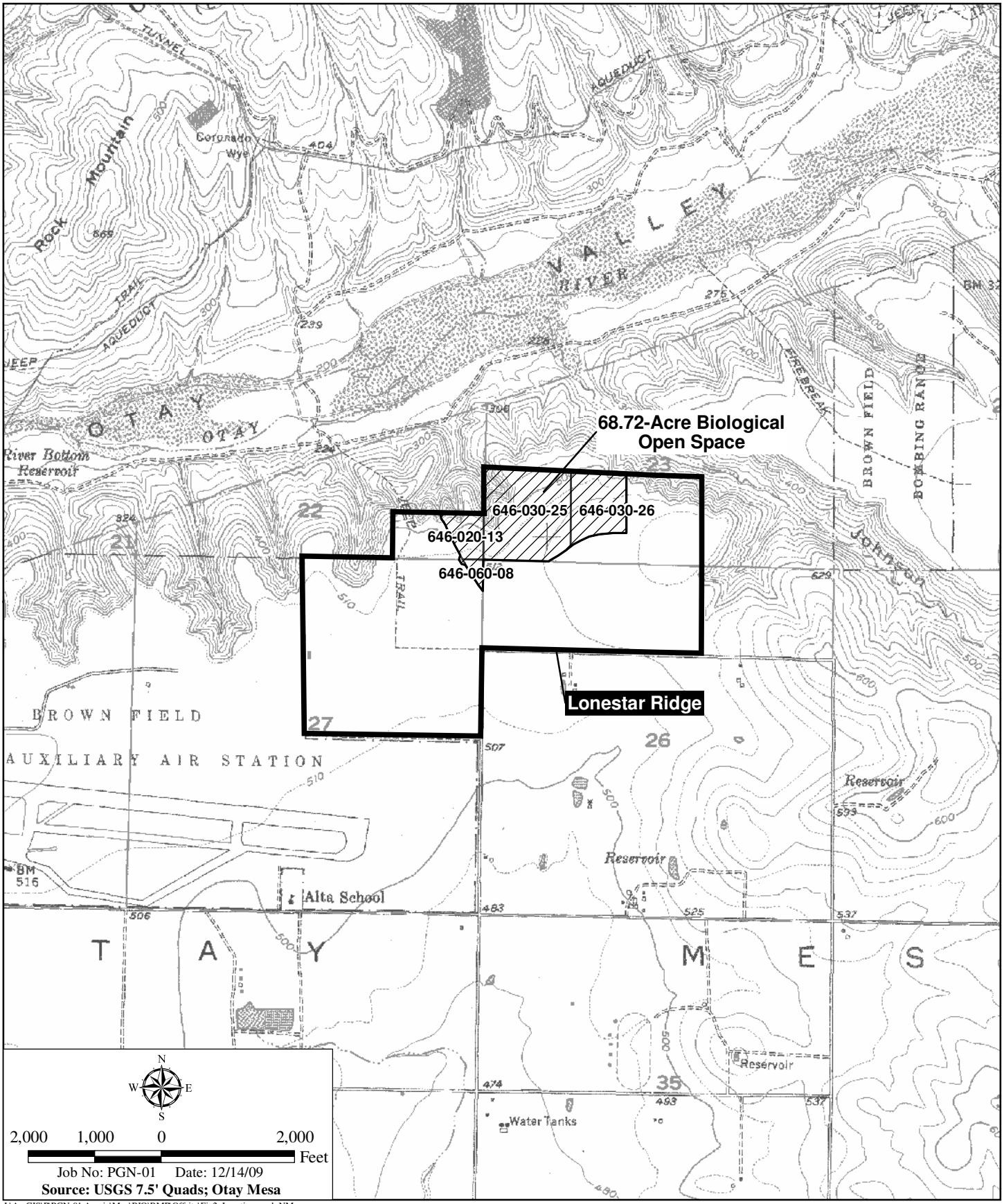
Regional Location Map

RESOURCE MANAGEMENT PLAN FOR OTAY BUSINESS PARK
OFF-SITE BIOLOGICAL OPEN SPACE AT LONESTAR RIDGE

HELIX

Figure 1



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Project Location Map

RESOURCE MANAGEMENT PLAN FOR OTAY BUSINESS PARK
OFF-SITE BIOLOGICAL OPEN SPACE AT LONESTAR RIDGE

Figure 2

HELIX

acres in the northern portion of the overall Lonestar Ridge property, east of SR-125, and occupies portions of Sections 22, 23, and 27 in Township 18 South, Range 1 West of the U.S. Geological Survey 7.5-minute Otay Mesa quadrangle (Figure 2). The BOS consists of all or part of the following Assessor's Parcel Numbers: 646-030-25, 646-030-26, 646-020-13, and 646-060-08 (Figure 2).

The majority of the site is on a relatively flat mesa with portions dropping off into Johnson Canyon on the south side of the Otay River Valley (Figure 2). Elevations range from approximately 380 feet above mean sea level (AMSL) at points along the side slopes of Johnson Canyon to approximately 530 feet AMSL on the mesa top. Access to the site will be ensured through an access easement covering adjacent preserved lands.

The BOS is located within the City of San Diego's Multi-Habitat Planning Area (MHPA; Figure 3). Land north of the BOS is within the County of San Diego's Multiple Species Conservation Program (MSCP) Preserve.

3.2 ENVIRONMENTAL SETTING

The vast majority of the site has been subject to cattle grazing, while various crops and orchards were planted on the southern portion of the site in the mid 1900s. There are no existing structures on site. Land uses in the surrounding area include Brown Field Airport to the southwest, industrial uses to the south, and the R.J. Donovan State Prison and George F. Bailey County Correctional Facility to the east. The residential areas of Otay Ranch are located just north of the MSCP open space and Otay River Valley. The SR-125 corridor is located immediately west of the BOS (Figure 3).

The BOS is located in the Peninsular Range Geomorphic Province of southern California. Soils within the BOS include Olivenhain cobbly loam and Stockpen gravelly clay loam (Bowman 1973). The clay loam soils generally tend to support rare and sensitive plants.

The climate in San Diego County is generally mild and arid. Temperatures in Otay Mesa are generally highest in September (mean high temperatures are 79˚F) and lowest in December (mean low temperatures are 45˚F). Average annual precipitation in the Otay Mesa is approximately 9.9 inches, with the highest average rainfall totals occurring in January and February (1.99 inches) and March (2.07 inches). The driest months are June, July, and August with approximately 0.08, 0.03, and 0.08 inch of rainfall per month, respectively (Weather.com 2008).

The site is located within the Otay Valley Hydrologic Area of the Otay Hydrologic Unit. No drainages occur within the BOS.

The rate of fires in San Diego County coastal shrublands generally increased over the last half of the 20th century. Over 600 fires have occurred in the foothills and mountains of San Diego County between 1910 and 1999, and several major fires in excess of 50,000 acres have occurred in recent years, likely as a result of drought conditions. The BOS did not burn in the 2003 or 2007 fires, or in recent preceding years.

3.3 USES OF PLAN AREA

The BOS would be used as mitigation for the proposed project. No trails or other public facilities are proposed within the BOS and no trails are proposed.

No easements issued to others exist within or across the BOS.

4.0 BIOLOGICAL RESOURCES – FUNCTIONS AND VALUES

4.1 VEGETATION COMMUNITIES

Three (3) vegetation communities occur within the BOS: vernal pool (including basins with fairy shrimp), Diegan coastal sage scrub, and non-native grassland (Table 2; Figure 4). Refer to the Biological Resources Report prepared by HELIX (2010b) for more information.

Table 2
VEGETATION COMMUNITIES WITHIN THE BOS
(POST-RESTORATION)

Vegetation Community/Habitat	Acre(s)
Vernal pool/Basins with Fairy Shrimp (44320)	1.07
Diegan coastal sage scrub (including disturbed; 32500)	11.26
Non-native grassland (42220)	56.40
TOTAL	**68.72**

*Vegetation categories and numerical codes are from Holland (1986) and Oberbauer (2008)

4.1.1 Vernal Pools/Basins with Fairy Shrimp

Vernal pools, a highly specialized habitat supporting a unique flora and fauna, are associated with 2 important physical conditions on Otay Mesa: a subsurface claypan that inhibits the downward percolation of water and topography characterized by a series of low hummocks (mima mounds) and depressions (vernal pools). These 2 physical conditions allow water to collect in the depressions during the rainy season, which gradually evaporates. As water evaporates, a gradient of low soil water availability to high soil water availability is created from the periphery of the pool margins to the center of the pool. The chemical composition of the remaining pool water becomes more concentrated as water evaporates, creating a gradient of low ion concentration at the pool periphery to high ion concentration at the pool center. A temporal succession of plant species occurs at the receding pool margins, depending on physical and chemical microenvironmental pool characteristics. Vernal pools in a wet year will have a high proportion of native species endemic to this habitat. During these years, exotic ruderal species characteristic of non-native grasslands that occur on the surrounding mima mounds will not invade these pools, as they are unable to tolerate the physiological conditions. In years of scarce rainfall insufficient to saturate the soil and create a surface pool, native endemic flora will not germinate, and the pool will be invaded by exotic species.

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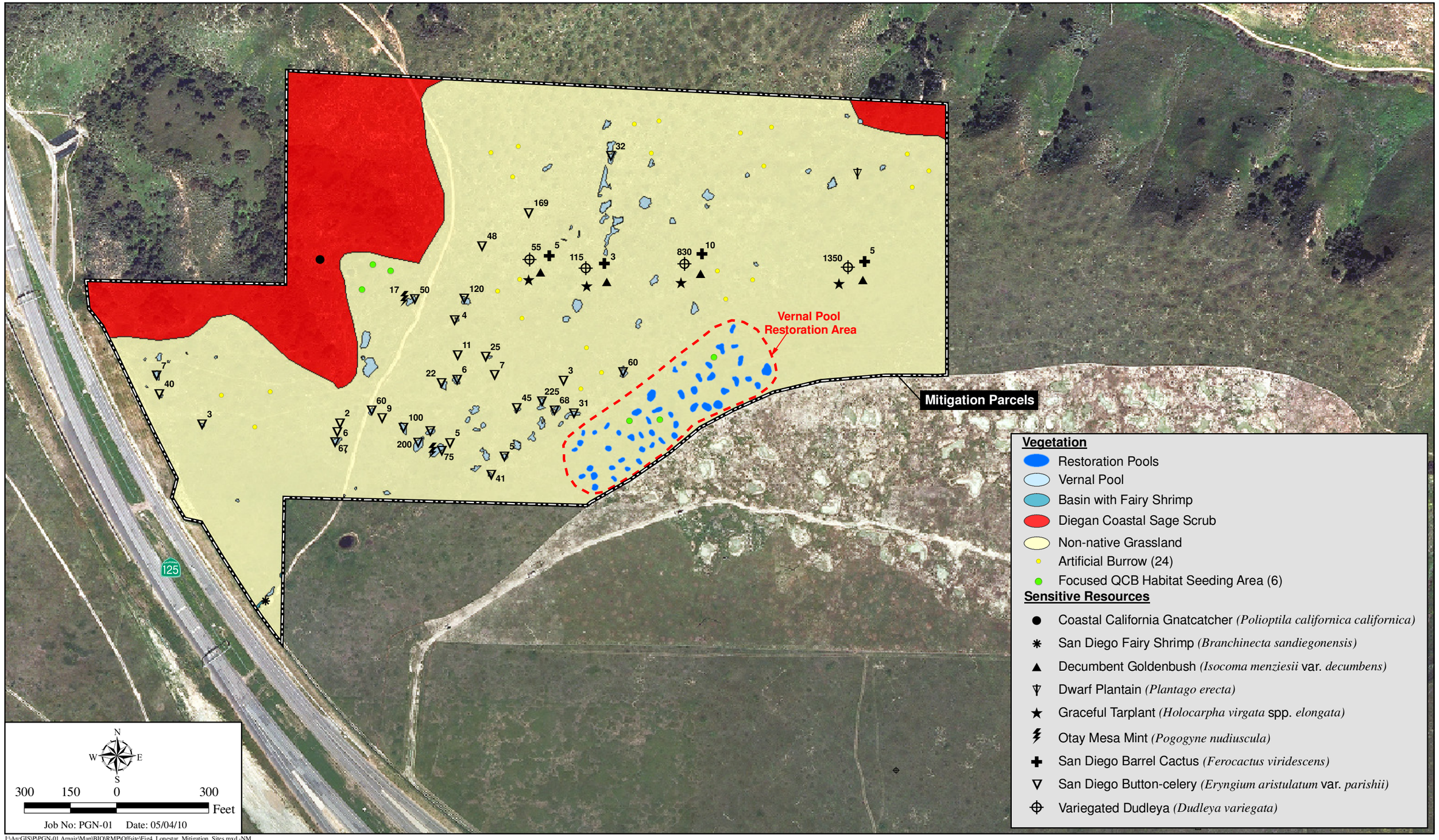
Regional Context

RESOURCE MANAGEMENT PLAN FOR OTAY BUSINESS PARK
OFF-SITE BIOLOGICAL OPEN SPACE AT LONESTAR RIDGE
Figure 3

HELIX



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Lonestar Mitigation Parcels

RESOURCE MANAGEMENT PLAN FOR OTAY BUSINESS PARK
OFF-SITE BIOLOGICAL OPEN SPACE AT LONESTAR RIDGE
Figure 4

A total of 80 vernal pools were identified within the BOS by HELIX during surveys conducted between 2003 and 2008, representing approximately 0.65 acre. The vernal pools on Lonestar Ridge are part of the J23 through J31 series originally identified by Bauder (1986). Some depressions (unvegetated basins) found within the BOS do not contain any vernal pool plant indicator species, but do contain the federally endangered San Diego or Riverside fairy shrimp. One basin with fairy shrimp totaling 0.01 acre occurs within the BOS. Vernal pools on site have been degraded by past agricultural activities. Most of the vernal pools within the BOS have a high composition of non-native grasses and forbs and generally only support 1 or 2 vernal pool indicator plant species. In addition, on-site vernal pool restoration would restore 0.41 acre of vernal pools within the Lonestar BOS. As such, a total of 1.07 acres of vernal pools will occur within the BOS following restoration.

4.1.2 Diegan Coastal Sage Scrub (including disturbed)

Coastal sage scrub is 1 of the 2 major shrub types that occur in California. This habitat type occupies xeric sites characterized by shallow soils. Sage scrub is dominated by subshrubs whose leaves abscise during drought. The Diegan coastal sage scrub within the BOS supports several plant species including lemonadeberry (*Rhus integrifolia*), California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and various flowering annuals. Diegan coastal sage scrub occurs on the canyon slopes and covers 11.26 acres of the BOS. This habitat is of low to moderate quality, with sparsely spaced native shrubs and an herbaceous layer supporting native and non-native grasses and forbs.

4.1.3 Non-native Grassland

Non-native grassland areas may have supported native grassland in the past, but have been overrun by exotic, introduced annuals. The flora of non-native grasslands includes a dense to sparse cover of introduced grasses and often numerous species of showy-flowered, native, annual forbs (Holland 1986). Characteristic species of the non-native grassland within the BOS include oats (*Avena* spp.), red brome (*Bromus madritensis* ssp. *rubens*), ripgut (*Bromus diandrus*), ryegrass (*Lolium* sp.), and mustard (*Brassica* sp.), as well as numerous native annuals such as blue-eyed grass (*Sisyrinchium bellum*), Fremont's camas (*Zigadenus fremontii*), goldfields (*Lasthenia californica*), popcorn flower (*Cryptantha* sp.), blue dicks (*Dichelostemma capitatum*), dwarf plantain (*Plantago erecta*), purple owl's-clover (*Castilleja exserta*), onion (*Allium* sp.), checker-bloom (*Sidalcea malviflora*), small-flower soap-plant (*Chlorogalum parviflorum*), as well as San Diego barrel cactus. A total of 56.40 acres of non-native grassland will occur within the BOS following vernal pool restoration.

4.2 PLANT SPECIES

4.2.1 Plant Species Correlation with Habitat Within the BOS

A total of 106 plant species were observed on the 273-acre Lonestar Ridge property during the 2003 and 2005 rare plant surveys as well as during other biological surveys conducted between 2002 and 2008 (Appendix A), the majority of which have potential to occur within the 68.72-acre BOS.

4.2.2 Rare, Threatened, or Endangered Plant Species Present or Likely to Occur

Six (6) sensitive plant species were observed during biological surveys within the BOS, including 2 federally and state listed endangered species (San Diego button-celery [*Eryngium aristulatum* var. *parishii*] and Otay mesa mint (*Pogogyne nudiuscula*]). All 6 species observed are considered sensitive by the California Native Plant Society (CNPS) and County, which include the 2 aforementioned species as well as variegated dudleya (*Dudleya variegata*), decumbent goldenbush (*Isocoma menziesii* var. *decumbens*), San Diego barrel cactus, and graceful tarplant (*Holocarpha virgata* ssp. *elongata*). Each of these species is further discussed below and is depicted on Figure 4. A list of sensitive plant species with potential to occur within the BOS is provided in Appendix B.

San Diego button-celery (*Eryngium aristulatum* var. *parishii*)
Listing: FE/SE; CNPS List 1B.1; County Group A; MSCP Covered
Distribution: San Diego and Riverside counties; Baja California, Mexico
Habitat: Vernal pools or mima mound areas with vernally moist conditions are preferred habitat
Status on site: Approximately 1,547 individuals occur within vernal pools within the BOS.
MSCP Management Requirements: Area specific management directives must include specific measures to protect against detrimental edge effects.

Otay mesa mint (*Pogogyne nudiuscula*)
Listing: FE/SE; CNPS List 1B.1; County Group A; MSCP Covered
Distribution: Southwestern San Diego County; Baja California, Mexico
Habitat: Restricted to vernal pools
Status on site: Species was observed in 2 locations within the BOS. A count of individual plants was not completed.
MSCP Management Requirements: Area specific management directives must include measures to: (1) protect against detrimental edge effects; (2) maintain surrounding habitat for pollinators; and (3) maintain pool watershed areas.

Variegated dudleya (*Dudleya variegata*)
Listing: --/--; CNPS List 1B.2; MSCP NE; MSCP Covered; County Group A
Distribution: San Diego and Baja
Habitat: Valley and foothill grassland, chaparral, coastal scrub, cismontane woodland, and vernal pools below 1,800 feet AMSL
Status on site: Approximately 2,350 individuals observed within the BOS
MSCP Management Requirements: Area specific management directives must include species-specific monitoring and specific measures to protect against detrimental edge effects to this species, including effects caused by recreational activities. Some populations now occur within a Major Amendment Area (Otay Mountain), and at the time permit amendments are proposed, strategies to provide protection for this species within the Amendment Area must be included.

Decumbent goldenbush (*Isocoma menziesii* var. *decumbens*)
Listing: --/--; CNPS List 1B.2; County Group A
Distribution: Orange and San Diego counties; Baja California, Mexico; San Clemente and Santa Catalina islands

Habitat: Presumed to utilize coastal sage scrub habitat intermixed with grassland and is more partial to clay soils than other closely related varieties
Status on site: Species was observed in 4 locations within the BOS. A count of individual plants was not completed.
MSCP Management Requirements: Area specific management directives have not been established for this species.

San Diego barrel cactus (*Ferocactus viridescens*)
Listing: --/--; CNPS List 2.1; MSCP Covered; County Group B
Distribution: San Diego County and Baja
Habitat: Dry slopes in coastal sage scrub
Status on site: Approximately 23 individuals were observed within the BOS
MSCP Management Requirements: Area specific management directives must include measures to protect this species from edge effects and unauthorized collection. Directives should also include appropriate fire management/control practices to protect against a too frequent fire cycle.

Graceful tarplant (*Holocarpha virgata* ssp. *elongata*)
Listing: --/--; CNPS List 4.2; CA Endemic; County Group D
Distribution: San Diego, Orange, and Riverside counties
Habitat: Coastal mesas and foothills with grassland habitats
Status on site: Species was observed in 4 locations within the BOS. A count of individual plants was not completed.
MSCP Management Requirements: Area specific management directives have not been established for this species.

4.2.3 Non-native and/or Invasive Plant Species

Several non-native grasses and forbs occur within the BOS, and are identified in Appendix A. The species posing the greatest management issue are mustard (*Brassica* sp.) and fennel (*Foeniculum vulgare*).

4.3 WILDLIFE SPECIES

4.3.1 Wildlife Species Correlation with Habitat Within the BOS

A total of 85 animal species were observed within the 273-acre Lonestar Ridge property during general and focused surveys conducted between 2002 and 2008, including 2 crustaceans, 23 butterflies (among other invertebrates), 1 amphibian, 3 reptiles, 48 birds, and 7 mammals (Appendix C), the majority of which have potential to occur within the 68.72-acre BOS.

4.3.2 Rare, Threatened, or Endangered Wildlife

A total of 2 sensitive animal species have been observed/detected within the BOS (Figure 4), including the federally listed endangered species: San Diego fairy shrimp and federal listed threatened coastal California gnatcatcher (*Polioptila californica californica*). Several other sensitive

species have been observed/detected on the larger 273-acre Lonestar Ridge property, and are identified in the list of potentially occurring sensitive animal species in Appendix D. An explanation of status codes for both plant and animal species sensitivity status is presented in Appendix E.

San Diego fairy shrimp (*Branchinecta sandiegonensis*)
Listing: FE/--; MSCP NE; County Group 1
Distribution: San Diego County
Habitat: Seasonal pools that occur in tectonic swales or earth slump basins and other areas of shallow and standing water, often in patches of grassland and agriculture interspersed in coastal sage scrub and chaparral
Status on site: Detected in 1 basin within the BOS
MSCP Management Requirements: Area specific management directives must include specific measures to protect against detrimental edge effects to this species.

Coastal California gnatcatcher (*Polioptila californica californica*)
Status: FT/SSC; County Group 1; County MSCP Covered
Distribution: In San Diego County, occurs throughout coastal lowlands
Habitat(s): Coastal sage scrub
Status on site: Species observed in Diegan coastal sage scrub within the BOS
MSCP Management Requirements: Area specific management directives must include measures to reduce edge effects and minimize disturbance during the nesting period, fire protection measures to reduce the potential for habitat degradation due to unplanned fire, and management measures to maintain or improve habitat quality including vegetation structure. No clearing of occupied habitat within the County's Biological Resource Core Areas may occur between March 1 and August 15.

4.3.3 Non-native and/or Invasive Wildlife

The only non-native animal species that was observed within the site during field surveys is the European starling (*Sturnus vulgaris*), which was introduced to North America in the 19th century. This species is widespread throughout San Diego County, where it competes for nest cavities with native birds such as the acorn woodpecker (*Melanerpes formicivorus*), northern flicker (*Colaptes auratus*), and purple martin (*Progne subis*; Unitt 2004).

4.4 OVERALL BIOLOGICAL AND CONSERVATION VALUE

The 68.72-acre BOS occurs within the City's MHPA and supports numerous sensitive plant and animal species, in addition to preserving coastal sage scrub, vernal pool, and grassland habitat. Land north and south the BOS is within the MSCP Preserve. The BOS is also adjacent to other mitigation land, including an open space parcel to the east of the BOS (for the Otay Crossings Commerce Park project) as well as land south of the BOS (for SR-125).

Following vernal pool restoration activities, the BOS will support 1.07 acres of vernal pool/basins with fairy shrimp, 11.26 acres of Diegan coastal sage scrub, and 56.40 acres of non-native grassland. Sensitive resources occurring within the BOS include 1,547 San Diego button-celery, 2,350 variegated dudleya, 23 San Diego barrel cactus, an unknown number of Otay mesa mint, graceful tarplant, and decumbent goldenbush. The BOS will also conserve 1 coastal

California gnatcatcher location, and vernal pools/basins with San Diego fairy shrimp, as well as habitat for several other sensitive animal species, including California horned lark (*Eremophila alpestris*), grasshopper sparrow (*Ammodramus savannarum*), white-tailed kite (*Elanus leucurus*), loggerhead shrike (*Lanius ludovicianus*), and western spadefoot (*Spea hammondii*). As previously stated, the site is bounded by existing conserved lands, which in combination will secure conservation of the entire mesa in this location east of SR-125 and help achieve the goal of protecting a regional population of variegated dudleya.

4.5 ENHANCEMENT AND RESTORATION OPPORTUNITIES

As stated above, approximately 68.72 acres of land will be dedicated as biological open space. These parcels present an excellent opportunity to enhance vernal pools, enhance QCB habitat, and function as a long-term burrowing owl receptor site. The following enhancement efforts will be conducted within the BOS (HELIX 2010c):

- Approximately 0.41 acre of vernal pools will be created/restored within the BOS. The restored vernal pools will support vernal pool plant indicator species (U.S. Army Corps of Engineers [Corps 1997]) and function as viable, self-sustaining vernal pool basins. In addition, salvage of soil containing fairy shrimp cysts in the impacted pools and will be used to inoculate a minimum of 0.41 acre of enhanced/restored pools with San Diego and Riverside fairy shrimp.
- Burrowing owl habitat will be created with the installation of 24 artificial burrows, and ensuring long-term protection of habitat for the owls as well as other natural resources.
- Salvage and translocation of the populations of variegated dudleya, San Diego button-celery, San Diego barrel cactus, and spreading navarretia on the Otay Business Park site to the BOS will occur. The salvaged variegated dudleya, San Diego button-celery, and San Diego barrel cactus will be incorporated into the vernal pool restoration area. San Diego barrel cactus also will be included in the Diegan coastal sage scrub planting palette. In addition, soil containing San Diego button-celery and spreading navarretia will be salvaged and used to inoculate restoration pools in the BOS vernal pool preserve. Chocolate lily seeds would be collected from the project site and used in restoration efforts within the Lonestar BOS.
- QCB host plant species and nectar plants will be included in the vernal pool watershed restoration effort, and 6 QCB habitat focused planting areas will be created within the vernal pool restoration area within the Lonestar BOS (Figure 4).
- The project applicant proposes to mitigate impacts to saltgrass grassland with native grass restoration within the watershed restoration area surrounding the restored vernal pools on the Lonestar Parcels.

The Resource Manager will not be responsible for maintenance of the restoration area until the 5-year maintenance and monitoring period for vernal pool restoration has been successfully completed. A restoration specialist will be responsible for overall supervision of the installation, maintenance, and monitoring of the restoration areas for the 5 years.

4.6 CULTURAL RESOURCES DESCRIPTION

4.6.1 Archaeological Resources

The Lonestar Ridge project area, which encompasses approximately 273 acres, of which 68.72 acres are within the BOS for this RMP, has been surveyed for cultural resources in whole or in part several times in the past, and was most recently surveyed in 2004 by Affinis (2004).

The results of Affinis' study identified 28 archaeological sites within the overall Lonestar Ridge project area, including development areas and mitigation parcels, as well as California Department of Transportation (Caltrans) right-of-way (now occupied by SR-125). Affinis archaeologists identified 6 previously undocumented sites within the 273-acre area, which, along with the other 22 sites, were assessed for cultural significance (Table 3).

Table 3
CULTURAL RESOURCES
WITHIN OVERALL LONESTAR RIDGE PROJECT AREA

Site Number (CA-SDI-#)	Site Description	Tested?	Significant?	Reference
11,210	Light lithic scatter: scrapers, choppers, flakes, cores	Yes*	No	Carrico et al. 1992; Smith 1989
11,211	Light to moderately dense lithic scatter: flaked stone tools, cores, flakes/debitage	Yes*	No**	Carrico et al. 1992; Rosen 1999; Smith 1989
11,212†	Light lithic scatter: scrapers, choppers, flakes, cores	Yes*	No**	Carrico et al. 1992; Rosen 1999; Smith 1989
11,213†	Light to moderate lithic scatter: flaked stone tools, cores, flakes, manos, metate fragments, biface point base	Yes*	No**	Carrico et al. 1992; Rosen 1999; Smith 1989
11,214	Light and widely dispersed scatter of lithic artifacts; lithic tool fragments, flakes/debitage	Yes*	No	Carrico et al. 1992; Smith 1989
11,215/11,216†	Light lithic scatter; scraper planes, scrapers, choppers, flakes	Yes*	No	Carrico et al. 1992; Smith 1989
11,217†	Light lithic scatter: scrapers, choppers, flakes, cores. Historic materials include window glass, square nails, wire, brick and mortar, kitchen items, and consumer goods	Yes*	Undetermined*	Carrico et al. 1992; Smith 1989

Table 3 (cont.) **CULTURAL RESOURCES** **WITHIN OVERALL LONESTAR RIDGE PROJECT AREA**				
11,218†	Light lithic scatter: scraper, flakes. Small amount of historic material: purple glass, mortar and brick	Yes*	Undetermined*	Carrico et al. 1992; Smith 1989
11,219†	Light lithic scatter: scrapers, scraper planes hammers, flakes. Historic material includes window glass, square nails, wire, brick and mortar, kitchen items, and consumer goods.	Yes*	Undetermined*	Carrico et al. 1992; Smith 1989
11,220	Light, widely dispersed lithic scatter: scraper planes, scrapers, choppers, flakes, cores	Yes*	No***	Carrico et al. 1992; Rosen 2002; Smith 1989
11,221	Historic dump location where trash was disposed of down the slope of a canyon: glass, ironstone, metal fragments, building material, leather, kitchen items, consumer goods, iron stove parts, hinges, farm equipment, wood. Turn of 20th century.	Yes*	Undetermined*	Carrico et al. 1992; Smith 1989
11,363	Lithic scatter: flakes and cores	No	No***	Carrico et al. 1992; Ritz et al. 1989; Rosen 2002
11,367/11,368	Sparse lithic scatter: flakes and cores	Yes	No***	Carrico et al. 1992; Ritz et al. 1989; Rosen 1990, 2002
11,951	Light lithic scatter	No	No**	Carrico et al. 1992; Rosen 1990, 1999
12,273H†	Small scatter of historic artifacts possibly associated with historic structure on 1903 USGS 30' Cuyamaca quadrangle	Yes	No	Carrico et al. 1992; Van Wormer et al. 1994

Table 3 (cont.)
CULTURAL RESOURCES
WITHIN OVERALL LONESTAR RIDGE PROJECT AREA

12,337†	Extremely large lithic scatter that encompasses CA-SDI-5352, -9974, -10,072, and -10,735	Yes	No	Byrd et al. 1994; Cupples and Eidsness 1978; Kyle and Gallegos 1992a-f; Kyle et al. 1996; Rosen 1990
14,210/H	Lithic scatter: scrapers, hammerstones, retouched flakes, flakes. Historic trash scatter: purple bottle fragments, bottle necks, ironstone, ceramics, metal fragments	No	Undetermined	Smith 1996
14,239	Lithic scatter: scrapers, retouched flake, core, flakes	No	No***	Rosen 2002; Smith 1996
14,241	Lithic scatter: retouched flake, flakes	No	No	Smith 1996
14,246	Lithic scatter: scrapers, retouched flake, flakes	No	No**	Rosen 1999; Smith 1996
14,248	Lithic scatter: scrapers, hammerstones, cores, flakes	No	No**	Rosen 1999; Smith 1996
14,250H†	Historic trash dump, including glass (purple, white, green), ironstone, metal	No	Undetermined	Smith 1996
Site 3†	Light lithic scatter: cores and flakes	No	No	Affinis 2004
Site 4	Light lithic scatter: cores and flakes	No	No	Affinis 2004
Site 6	Light lithic scatter: cores and flakes	No	No	Affinis 2004
Site 7	Light lithic scatter: cores and flakes	No	No	Affinis 2004
Site 8	Light lithic scatter: scrapers, cores and flakes	No	No	Affinis 2004
Site 10	Light lithic scatter: cores and flakes	No	No	Affinis 2004

†Site located in development area west of SR-125

*Sites were tested by Smith (1989), but report was never finalized, and the adequacy of the testing was not determined by City staff

**Sites were addressed in conjunction with SR-125 (Rosen 1999)

***Sites were addressed by Caltrans programmatically as not significant, per the *Management Plan for Otay Mesa Prehistoric Resources* (Rosen 2002)

At least 10 of the identified sites are in the western half of the Lonestar Ridge area and therefore outside of the BOS. Of the 18 sites that may be within or partially within the BOS, significance was undetermined for 2 of them (CA-SDI-11,221 and -14,210/H), and the remaining 16 were considered not significant. As such, consultation with a cultural resource professional will be initiated prior to any earthwork in the BOS.

All cultural resource sites located within the BOS must be preserved and maintained as they are discovered. Monitoring and general stewardship measures will be implemented to protect these resources.

The cultural sites preserved within the BOS will be monitored during regular site visits to ensure that no natural or human-induced impacts have occurred.

Avoidance is generally the best preservation method for the cultural resources within the BOS; therefore, no signage will be installed drawing attention to any cultural sites within the preserve. Given the low significance of the cultural resources on the site, fencing is not anticipated to be necessary. The resource manager will also be responsible for removing any trash or debris that is found on or around the cultural sites.

No substantial management constraints are expected that may affect preservation of cultural resources within the BOS.

4.6.2 Native American Consultation

There is no indication that the project site was used by Native Americans for religious, ritual, or other special activities and, therefore, impacts to Native American burial sites are not expected. A consultation has not taken place but will be initiated by the Resource Manager following acceptance of the BOS.

4.6.3 Historical Resources

The BOS does not support any known structures.

5.0 BIOLOGICAL ELEMENT GOALS

The ultimate goal of this RMP is to detail the methods to preserve and manage lands to the benefit of the flora, fauna, and native ecosystem functions reflected in the natural communities occurring within the RMP land. In addition, this RMP establishes the following goals with regard to biological resources:

Vegetation Communities: To preserve 68.72 acres of habitat within the BOS in perpetuity. Within the BOS, habitat will be monitored for: (1) quality, (2) exotic plant control measures will be implemented to prevent or reduce the spread of weeds, and (3) adaptive management will be conducted if necessary following fire or flood events.

Sensitive Species: To ensure the continued existence of all sensitive plant and animal species and/or to facilitate expansion of sensitive plant and animal species within the open space.

5.1 BIOLOGICAL MANAGEMENT TASKS

The BOS will be visually inspected for changes during quarterly maintenance and monitoring visits, and all observations will be documented. Any substantial changes will be monitored more closely to determine the necessity of additional measures. Such visits shall include the monitoring of the spread of exotic plant species and accumulation of trash/debris. Fences and signs associated with the BOS also will be inspected and any necessary repairs noted.

Baseline Biological Inventory

The quantity and quality of vegetation communities within the BOS will be documented during the first year of active management. This inventory will incorporate data from the biological technical report for the Lonestar Industrial Park project (HELIX 2009b) with the findings of an initial baseline inventory field survey. These data will allow the Resource Manager to measure habitat changes caused by natural and human effects and to evaluate management efforts during subsequent years.

Upon implementation of this RMP, the Resource Manager will be provided digital files containing the existing vegetation and sensitive resources data, which will be updated following the baseline inventory field survey during the start-up (first year) phase of the RMP. The intent of this update is to document current conditions in the open space areas (including graphic and tabular depictions of habitat acreages), document all species observed (either directly or indirectly by sign such as scat, tracks, etc.) within each identified habitat type, and document the locations of any sensitive plant and animal species.

The baseline inventory update will be conducted during the first year of active management. To optimize the probability of detecting sensitive species reported or expected to occur within the BOS, this survey should be conducted between March and May, when the majority of sensitive plant and animal species are most detectable.

Update Biological Mapping

Vegetation and sensitive species mapping will be updated every 5 years following implementation of this RMP. A site visit should be conducted using updated aerial photography to determine vegetation communities present at the time of the survey. Any observed/detected sensitive species will be added to the biological resources maps of the BOS.

Sensitive Species Monitoring

Preservation of sensitive plant and animal populations within the BOS is one step in achieving the overall long-term conservation of these species. Monitoring of sensitive species is another step in achieving the overall long-term conservation of these species. Sensitive species monitoring will help the Resource Manager identify long- and short-term threats and recommend any necessary protective measures. Sensitive plant and animal monitoring will occur during

management activities, and the locations of any observed/detected sensitive species will be documented and added to the biological resources maps. Adaptive management measures may be required to intervene when either natural or man-made disturbances or effects appear to be adversely influencing a sensitive species.

It is the responsibility of the Resource Manager to evaluate the status of preserved species within the preserve and to institute protective measures if any individual species becomes threatened. Sensitive species population monitoring will vary based on the target species. In each assessment, the Resource Manager will observe and document sensitive species locations and conditions. Monitoring/reporting efforts will include all sensitive species previously documented within the BOS.

Rare Plant Surveys

A rare plant survey will be conducted 2 of every 5 years throughout the BOS during the appropriate survey period for the 6 sensitive plant species observed within the BOS (Table 4). The Resource Manager will decide in which years the surveys will be conducted, with the goal of surveying during average or above-average rainfall years. A visual estimate of variegated dudleya, rather than direct counts, will occur. Presence/absence surveys for San Diego button-celery and Otay mesa mint may be conducted concurrently with fairy shrimp surveys, as the focus area will be vernal pools/basins. Presence/absence surveys will be conducted for the remaining sensitive species observed, with specific attention given to any factors that may be negatively affecting those species (i.e., vandalism, mortality, etc.). In addition, an annual visual assessment of each population of sensitive species will be conducted during a regular maintenance event and will be compared to results from previous years in order to help track overall population trends.

Table 4
BLOOMING PERIODS*/SURVEY SEASON
FOR SENSITIVE PLANT SPECIES WITHIN THE BOS*

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Otay mesa mint (*Pogogyne nudiuscula*)					X	X	X					
Variegated dudleya (*Dudleya variegata*)				X	X	X						
San Diego button-celery (*Eryngium aristulatum* var. *parishii*)				X	X	X						
Decumbent goldenbush (*Isocoma menziesii* var. *decumbens*)				X	X	X	X	X	X	X	X	
Graceful tarplant (*Holocarpha virgata* ssp. *elongata*)					X	X	X	X	X	X	X	
San Diego barrel cactus (*Ferocactus viridescens*)	Survey season is year-round, blooms not necessary											

*Blooming periods are from CNPS 2009

Coastal California Gnatcatcher Surveys

A 1-day survey for coastal California gnatcatcher will be conducted 2 out of every 5 years within appropriate habitat in the BOS. Each survey will occur during the breeding season (March 1 to August 15). The Resource Manager will decide in which years the surveys will be conducted. The surveys will only be conducted during protocol-level conditions. Any coastal California gnatcatcher observed incidentally during other surveys will also be documented.

Fairy Shrimp Surveys

Presence/absence surveys for San Diego and Riverside fairy shrimp will be conducted every 2 of 5 years during the wet season within appropriate habitat in the BOS. The Resource Manager will decide in which years the surveys will be conducted. Presence/absence surveys for San Diego button-celery and Otay mesa mint may be conducted concurrently with fairy shrimp surveys.

Exotic Plant Control

The Resource Manager will coordinate with land developers and owners adjacent to the BOS to provide information regarding exotic plant species and to increase the efficiency of exotic plant control programs. To accommodate changing growth patterns, weeding will occur as needed at the discretion of the Resource Manager. Weeding will occur by manual or mechanical means; no weed whips or chemical herbicides may be used unless specifically determined to be necessary by the Resource Manager. The Resource Manager is responsible for removal of species rated as High by the California Invasive Plant Council (Cal-IPC) within 2 weeks after discovery. Special attention will be paid to eradicating mustard and fennel, which can form dense local populations and drastically alter the composition and structure of many plant communities (Cal-IPC 2006). Non-native grasses will not be prioritized for removal unless it is determined by the Resource Manager that they are significantly impacting a sensitive resource. General weeding events will occur twice annually: in January/February and April/May.

If the use of herbicide is deemed necessary, application should be minimal, and may only occur in compliance with all federal and state laws. Use of chemical herbicides should be determined in coordination with the County Department of Environmental Health. All herbicide use will be applied by backpack sprayers or stump painting directly on target weeds and will involve short duration, biodegradable chemicals.

Predator Control

A moderate tolerance for pest species will be permitted, but if the Resource Manager determines that pest eradication measures (pesticide application or trapping) are required, the USFWS and/or CDFG will be contacted to determine the need and appropriate methods, including potentially hiring a licensed pest control advisor. Exotic species control/eradication programs should be implemented at the appropriate time of year depending on the pest species and field conditions, and should be coordinated with efforts on adjacent properties.

Fire Management

Fire is an important element in the ecology of southern California but can also present potential hazards to habitat within the BOS. Following fire events, vegetation within the BOS will be allowed to recover naturally; however, seeding and/or planting of container stock may be required at the discretion of the Resource Manager. Special attention to weed establishment following fire will be assessed by the Biologist.

5.2 ADAPTIVE MANAGEMENT

The Resource Manager is responsible for interpreting the results of site monitoring to determine the ongoing success of the RMP. If it is necessary to modify the plan between regularly scheduled updates, plan changes shall be submitted to the County and agencies for approval as required.

5.3 OPERATIONS, MAINTENANCE, AND ADMINISTRATION TASKS

A list of tasks such as baseline inventory, vegetation mapping, species survey, species, management, etc. is included in Table 1.

5.3.1 Goals

Ongoing maintenance and administration, which will be the responsibility of the Resource Manager, will be conducted to ensure no loss of resource quality within the BOS.

5.3.2 Tasks

The general operations, maintenance, and administrative tasks to be conducted by the Resource Manager will include the following tasks.

Annual Monitoring Reports

A letter report will be submitted to the USFWS, CDFG, and County that will summarize the overall condition of vegetation communities and sensitive species in the BOS, propose management tasks for the following year, and discuss results of management activities proposed in the previous report. Submitted annually by the end of January, this letter report will compare the most recent data with those collected in previous years, evaluate sensitive species status and local wildlife corridor use, and outline appropriate remedial measures. Fees for County review will also be included with submittal of the annual report.

The results of all updated vegetation mapping (every fifth year), sensitive plant surveys (2 of every 5 years), and sensitive animal surveys (varies by species) should be included in the appropriate annual letter reports.

Management Plan Review

This RMP will be reviewed every 5 years to determine the need for revisions or updates. Due to changing conditions on site, it may be necessary to revise the tasks outlined in this plan to ensure continued success of the stated goals.

Access Control

To prevent human-induced degradation of the BOS due to illegal occupancy, trespassing (off-highway vehicle activity), removal of resources, or dumping of trash or debris, the Resource Manager will restrict access to the BOS. Permanent signage will be posted every 500 feet along the northern and western boundaries of the BOS and at locations of any unauthorized trails entering the BOS and be maintained by the Resource Manager. All signs will be corrosion-resistant (e.g., constructed of steel), measure at minimum 6 by 9 inches in size, be posted on a metal post at least 3 feet above ground level, and provide notice in both English and Spanish that the area is an ecological preserve with trespassing prohibited. The signs will state the following:

Sensitive Environmental Resources
Area Restricted by Easement
Entry without express written permission from the County of San Diego is prohibited.
To report a violation or for more information about easement restrictions and exceptions
contact the County of San Diego, Department of Planning and Land Use
Reference: TM5505

Fencing

Temporary 3-strand barbless wire will be installed around the vernal pool mitigation areas. It will remain in place during the 5-year maintenance and monitoring period. Installation of temporary fencing is the responsibility of the project applicant. Fencing exists between the BOS and SR-125 right-of-way. No other permanent fencing is proposed.

Additional fencing needs will be identified by the Resource Manager and a fencing plan will be submitted to the County for review prior to installation. Such fencing may be required for:

- Prevention of unauthorized vehicle access;
- Protection of open space boundaries (e.g., along utility easements);
- Prevention of trail formation within the preserve; and/or

Illegal Occupancy

Illegal occupancy is common in open space areas, although this is not anticipated to be an issue on this site because of the open nature of the habitat. The Resource Manager will survey the BOS for evidence of illegal access concurrently with other site management activities and file a report with the Sheriff and the County DPLU, if necessary.

Removal of Resources

Removal of any plants, animals, rocks, minerals, or other natural resources from the preserve is prohibited. The Resource Manager will maintain a log of illegal collecting and may report individuals caught removing natural resources from the BOS to the USFWS, CDFG, County, and/or Sheriff's Office. The Resource Manager may allow and supervise seed collection and plant cuttings as part of revegetation efforts within the preserve and/or in nearby areas. Any such collected plant materials should be limited to that necessary to ensure successful revegetation while not adversely affecting local plant populations.

Maintain Confidentiality of Archaeological Site Locations

Successful management of resources within the BOS will require maintenance of the cultural resource sites. Due to the sensitive nature of these cultural resources, the Resource Manager will maintain records of their locations and ensure that they remain confidential.

Trash Removal and Vandalism Repair

The Resource Manager will also conduct general trash removal within the BOS during regular management site visits. Additionally, damage caused by vandalism will be repaired. Trash removal and vandalism repair will occur as needed during regular bi-monthly (every other month) site visits.

Hazardous Materials Monitoring

The release of hazardous materials such as fuels, oil, vegetation clippings, trash, and landscaping related chemicals (e.g., pesticides and herbicides) has potential to affect the BOS negatively. Although no specific survey will be conducted, if such hazardous materials are observed within the BOS during regular bi-monthly (every other month) site visits, remedial measures to remove the material will occur.

5.4 MANAGEMENT CONSTRAINTS

This RMP follows the regulatory and permitting requirements of the USFWS, CDFG, and County. Although it anticipates measures for most foreseeable contingencies, several external constraints remain. For example, illegal trespassing could negatively impact sensitive animal species, and environmental factors, such as prolonged drought, could have detrimental effects on sensitive plant populations within the BOS. Other management constraints include potential noise effects from SR 125.

5.5 PUBLIC USE TASKS

Compatible public uses of the site include scientific uses. The BOS will not have public trails or other facilities. No motorized recreational vehicles, hunting, or unauthorized collection will be allowed within the BOS. Existing trails will blocked and/or demarcated with signage to prevent continued use. No additional trails will be installed. Because no trails will be allowed within the BOS, no informative services will be provided (Table 1).

5.6 FIRE MANAGEMENT TASKS

A controlled burn of the site will be considered as part of the weed eradication strategy intended to improve habitat for burrowing owl and QCB. No other fire management activities (clearing, thinning, mowing, discing, blading, etc.) are planned within the BOS. All such measures to reduce wildfire risk are to occur entirely outside of the BOS.

6.0 LIST OF PREPARERS

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APPENDIX A

PLANT SPECIES OBSERVED

Appendix A
PLANT SPECIES OBSERVED – LONESTAR RIDGE§

SCIENTIFIC NAME	COMMON NAME	HABITAT**
*Achillea millefolium**	common yarrow	NNG
Achnatherum diegoensis†	San Diego County needlegrass	DCSS
Allium sp.	wild onion	NNG
Amaranthus albus	white tumbleweed	NNG
Amsinckia menziesii var. *intermedia*	rancher's fiddleneck	NNG
*Anagallis arvensis**	scarlet pimpernel	NNG
Artemisia californica	California sagebrush	DCSS, NNG
Astragalus trichopodus var. *lonchus*	ocean locoweed	DCSS
*Atriplex semibaccata**	Australian saltbush	NNG
*Avena barbata**	wild oat	DCSS, NNG
*Avena fatua**	wild oat	DCSS, NNG
*Beta vulgaris**	sea beet	NNG
Bloomeria crocea	golden star	NNG, DCSS
*Brachypodium distachyon**	purple falsebrome	NNG
Brassica sp.*	mustard	NNG
*Brassica nigra**	black mustard	NNG
Brodiaea jolonensis	mesa brodiaea	NNG
*Bromus diandrus**	common ripgut grass	NNG
Bromus madritensis ssp. *rubens**	foxtail chess	NNG
Calochortus splendens	lilac mariposa lily	NNG
Calystegia macrostegia	morning glory	DCSS, NNG
Castilleja exserta	purple owl's clover	NNG
*Centaurea melitensis**	star thistle	NNG
*Chenopodium murale**	nettle-leaf goosefoot	NNG
Chlorogalum parviflorum	soap plant	NNG
Chlorogalum pomeridianum	soap plant	NNG
*Convolvulus arvensis**	bindweed	NNG
Cotula coronopifolia	African brass-buttons	Pond
Crassula connata	dwarf stone-crop	DCSS
Cressa truxillensis	alkali weed	NNG
Cryptantha sp.	cryptantha	NNG
*Cynodon dactylon**	Bermuda grass	NNG
Delphinium sp.	larkspur	DCSS
Deinandra conjugens†	Otay tarplant	DCSS, NNG
Deinandra fasciculata	fascicled tarplant	NNG
Dichelostemma capitatum	blue dicks	NNG
*Dimorphotheca aurantiaca**	African daisy	NNG
Dodecatheon clevelandii ssp. *clevelandii*	Cleveland's shooting star	NNG
Dudleya edulis	ladies-fingers	DCSS
Dudleya variegata†	variegated dudleya	DCSS, NNG
Eleocharis macrostachya	pale spike-rush	VP
Encelia californica	California encelia	DCSS
Eremocarpus setigerus	dove weed	NNG

Appendix A (cont.)
PLANT SPECIES OBSERVED – LONESTAR RIDGE§

SCIENTIFIC NAME	COMMON NAME	HABITAT**
Eriogonum fasciculatum	California buckwheat	DCSS
Eriophyllum confertiflorum	golden yarrow	DCSS
*Erodium cicutarium**	red-stem filaree	NNG
*Erodium moschatum**	green-stem filaree	NNG
Eryngium aristulatum ssp. *parishii*†	San Diego button-celery	VP
Eucalyptus sp.*	eucalyptus	NNG, EW
Ferocactus viridescens†	San Diego barrel cactus	DCSS, NNG
Fritillaria biflora	chocolate lily	DCSS
*Foeniculum vulgare**	fennel	NNG
Galium sp.	bedstraw	DCSS
Gaura sinuata	wavy leaved gaura	NNG
Grindelia robusta	gum plant	NNG
*Hedypnois cretica**	Crete hedypnois	NNG
Heteromeles arbutifolia	toyon	DCSS, NNG
Hirschfeldia incana	perennial mustard	NNG
Holocarpha virgata ssp. *elongata*†	graceful tarplant	NNG
*Hordeum marinum**	Mediterranean barley	NNG
*Hypochaeris glabra**	smooth cat's-ear	NNG
Isocoma menziesii	goldenbush	NNG
Isocoma menziesii var. *decumbens*†	decumbant goldenbush	DCSS
Isomeris arborea	bladderpod	DCSS
*Lactuca serriola**	wild lettuce	NNG
*Lamarckia aurea**	goldentop	NNG
Lasthenia californica	goldenfields	NNG, DCSS
Lepidium lasiocarpum	sand peppergrass	DCSS, NNG
Lessingia filaginifolia	sand-aster	NNG
*Lolium multiflorum**	ryegrass	NNG
Lotus scoparius	deerweed	DCSS
Malvella leprosa	alkali-mallow	NNG
*Marrubium vulgare**	horehound	NNG
*Medicago polymorpha**	bur-clover	NNG
*Melilotus indica**	Indian sweet clover	NNG
Mirabilis californica	wishbone plant	DCSS
Mesembryanthemum nodiflorum	slender-leaved iceplant	NNG
Muilla clevelandii†	San Diego goldenstar	DCSS
Nassella lepida	foothill needlegrass	NNG
Nassella pulchra	purple needlegrass	NNG
*Olea europa**	olive	NNG
Opuntia littoralis	prickly pear cactus	DCSS, NNG
Opuntia prolifera	cholla	DCSS
Oxalis sp.*	sorrel	NNG
Phalaris sp.*	canary grass	NNG

Appendix A (cont.)
PLANT SPECIES OBSERVED – LONESTAR RIDGE§

SCIENTIFIC NAME	COMMON NAME	HABITAT**
*Picris echoides**	bristly ox-tongue	NNG
Plagiobothrys sp.	popcorn flower	VP
Plantago erecta	dwarf plantain	NNG
Pogogyne nudiuscula†	Otay mesa mint	VP
*Polygonum arenastrum**	knotweed	NNG
Ranunculus californicus	California buttercup	NNG
Rhus integrifolia	lemonade berry	DCSS, NNG
*Rumex crispus**	curly dock	NNG
Rumex maritimus	golden dock	NNG
*Salsola tragus**	Russian thistle	DCSS, NNG
Sanicula arguta	sharp-tooth sanicle	NNG
Sambucus mexicana	blue elderberry	DCSS
Selaginella cinerascens	ashy spike-moss	DCSS, NNG
Sidalcea malvaeflora	checker-bloom	NNG
Sisyrinchium bellum	blue-eyed grass	DCSS, NNG
*Sonchus asper**	prickly sow thistle	NNG
*Sonchus oleraceus**	common sow thistle	NNG
Stachys ajugoides var. *rigida*	hedge-nettle	Pond
Tamarix sp.	tamarisk	Pond
Viguiera laciniata†	San Diego sunflower	DCSS
Zigadenus fremontii	star lily	NNG

§Species list is for the entire 273-acre Lonestar Ridge site, which encompasses the 82-acre biological open space (BOS) proposed as partial mitigation for impacts associated with Otay Crossings Commerce Park.
†Denotes sensitive species
*Denotes non-native species
**Habitat Acronyms: DCSS=Diegan coastal sage scrub, EW=Eucalyptus woodland, NNG=Non-native grassland, VP=Vernal pool. Eucalyptus woodland does not occur within the BOS.

APPENDIX B

SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR

Appendix B SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	**STATUS***	**POTENTIAL/HABITAT/RATIONALE**
San Diego thornmint (*Acanthomintha ilicifolia*)	--/SE CNPS List 1B.1 MSCP NE	Moderate. Occurs on clay soils in chaparral, coastal sage scrub, grasslands, and vernal pools.
California adolphia (*Adolphia californica*)	--/-- CNPS List 2.1	Low. Found in habitats with clay soils. Would have been observed if present.
Shaw's agave (*Agave shawii*)	--/-- CNPS List 2.1 MSCP NE	Moderate. Would have been detected if present in coastal sage scrub.
San Diego bur-sage (*Ambrosia chenopodiifolia*)	--/-- CNPS List 2.1	Low. Found on dry sunny hillsides within maritime succulent scrub and coastal sage scrub. Would have been observed if present.
San Diego ambrosia (*Ambrosia pumila*)	FE/-- CNPS List 1B.1 MSCP NE	Low. Very limited range. Generally associated with upper river terraces.
Dean's milk-vetch (*Astragalus deanei*)	--/-- CNPS List 1B.1 CA Endemic	Low. Chaparral, coastal sage scrub, and riparian scrub. Would have been detected if present.
Golden-spined cereus (*Bergerocactus emoryi*)	--/-- CNPS List 2.2	Low. Habitat in sandy soils and bluffs associated with coastal sage scrub and maritime succulent scrub. Would have been found if present.
Orcutt's brodiaea (*Brodiaea orcuttii*)	--/-- CNPS List 1B.1 MSCP Covered	Moderate. Found in chaparral, meadows and seeps, grassland, and vernal pools. Would have been observed if present.
Orcutt's bird-beak (*Cordylanthus orcuttianus*)	--/-- CNPS List 2.1 MSCP Covered	Moderate. Found in coastal sage scrub.
Otay tarplant (*Deinandra conjugens*)	FT/SE CNPS List 1B.1 City MSCP NE	Moderate. Fractured clay soils in grasslands or sparsely vegetated Diegan coastal sage scrub. Species found within adjacent open space.
Western dichondra (*Dichondra occidentalis*)	--/-- CNPS List 4.2	Moderate. Found in sandy banks within coastal sage scrub, chaparral, or southern oak woodland. Often proliferates on recently burned slopes.
Orcutt's dudleya (*Dudleya attenuata* ssp. *orcuttii*)	--/-- CNPS List 2.1	Low. Occurs in coastal bluff scrub, chaparral, and coastal sage scrub. Known only from Border Field State Park.
Palmer's goldenbrush (*Ericameria palmeri* ssp. *palmeri*)	--/-- CNPS List 2.2 MSCP Covered	Low. Found in coastal sage scrub. Would have been found if present.
Palmer's grapplinghook (*Harpagonella palmeri*)	--/-- CNPS List 4.2	Moderate. Found in clay soils in chaparral, coastal sage scrub, and grasslands. Would have been detected if present in grasslands.
San Diego marsh elder (*Iva hayesiana*)	--/-- CNPS List 2.2	Low. Appropriate habitat does not occur on site. Occurs immediately off site in Johnson Canyon.

Appendix B (cont.)
SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR

SPECIES	STATUS*	POTENTIAL/HABITAT/RATIONALE
Gander's pitcher sage (*Lepechinia ganderi*)	--/-- CNPS List 1B.3 MSCP NE	Low. Found in chaparral, coastal sage scrub, and grasslands on gabbroic or metavolcanic soils. Generally found farther inland.
San Diego goldenstar (*Muilla clevelandii*)	--/-- CNPS List 1B.1 MSCP Covered	Moderate. Would likely have been observed if present. Observed off site east of Johnson Canyon.
Little mousetail (*Myosurus minimus* ssp. *apus*)	--/-- CNPS List 3.1	Moderate. Habitat in vernal pools and alkaline marshes. Would have been detected if present.
Spreading navarretia (*Navarretia fossalis*)	FT/-- CNPS List 1B.1 MSCP Covered	High. Habitat in vernal pools. Previously observed by Dudek (1992) on site in 1 vernal pool.
Snake cholla (*Opuntia californica* var. *californica*)	--/-- CNPS List 1B.1 MSCP NE	Low. Found in chaparral and coastal sage scrub. Would have been detected if present.
California Orcutt grass (*Orcuttia californica*)	FE/SE CNPS List 1B.1 MSCP NE	Low. Found in vernal pools but would have been detected if present on site.
Short-lobed broom-rape (*Orobanche parishii* ssp. *brachyloba*)	--/-- CNPS List 4.2	Moderate. Found in sandy soils, coastal bluff scrub, coastal dunes, and coastal sage scrub.
Nuttall's scrub oak (*Quercus dumosa*)	--/-- CNPS List 1B.1	Low. Found in chaparral and coastal sage scrub. Would have been detected if present.
Munz's sage (*Salvia munzii*)	--/CEQA CNPS List 2.2	Low. Chaparral and coastal sage scrub. Would have been detected if present.
Parry's tetracoccus (*Tetracoccus dioicus*)	--/-- CNPS List 1B.2 MSCP Covered	Low. Found in chaparral and coastal sage scrub. Would have been detected if present.
San Diego sunflower (*Viguiera laciniata*)	--/-- CNPS List 4.2	Moderate to high. Found in coastal sage scrub and has been observed on adjacent sites.

*Refer to Appendix E for a listing and explanation of status and sensitivity codes

APPENDIX C

ANIMAL SPECIES OBSERVED OR DETECTED

Appendix C
ANIMAL SPECIES OBSERVED OR DETECTED – LONESTAR RIDGE§

SCIENTIFIC NAME	COMMON NAME	HABITAT*
INVERTEBRATES		
Crustaceans		
Branchinectidae – Fairy Shrimp		
Branchinecta sandiegonensis†	San Diego fairy shrimp	VP
Streptocephalus woottoni††	Riverside fairy shrimp	VP
Insects		
Lepidoptera – Butterflies and Moths		
Anthocharis sara	Sara orangetip	NNG
Apodemia mormo virgulti	Behr's metalmark	NNG, DCSS
Brephidium exilis	pygmy blue	NNG, DCSS
Coenonympha californica	California ringlet	NNG
Calephelis wrightii	Wright's metalmark	NNG
Danaus gilippus	queen	NNG
Erynnis funeralis	funeral duskywing	NNG
Euphydras editha quino†	Quino checkerspot butterfly	NNG, DCSS
Hylephila phyleus	fiery skipper	NNG
Icaricia acmon	acmon blue	NNG, DCSS
Leptotes marina	marine blue	NNG
Nymphalis antiopa	mourning cloak	NNG
Papilio eurymedon	pale swallowtail	NNG
Papilio glaucas	tiger swallowtail	NNG
Papilio zelicaon	anise swallowtail	NNG
Junonia coenia	buckeye	NNG
Pieris rapae	cabbage white	NNG
Pontia protodice	common white	NNG
Pyrgus communis	checkered skipper	NNG
Speyeria callippie comstocki	Comstock's fritillary	NNG
Vanessa annabella	west coast lady	NNG, DCSS
Vanessa atalanta	red admiral	NNG
Vanessa cardui	painted lady	NNG, DCSS
Arachnids		
Theraphosidae – Tarantulas		
Aphonopelma sp.	tarantula	NNG

Appendix C (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED – LONESTAR RIDGE§

SCIENTIFIC NAME	COMMON NAME	HABITAT*
VERTEBRATES		
Amphibians		
Scaphiopodidae (spadefoot toads)		
Spea hammondi††	spadefoot toad	VP (dry)
Reptiles		
Phrynosomatidae – Earless, Spiny, Tree, Side-blotched, and Horned Lizards		
Sceloporus occidentalis	western fence lizard	DCSS
Scincidae – Skinks		
Eumeces skiltonianus interparietalis†	Coronado skink	DCSS
Viperidae – Pit Vipers		
Crotalus viridis	western rattlesnake	DCSS
Birds		
Accipitridae – Hawks, Kites, and Eagles		
Accipiter cooperii††	Cooper's hawk	NNG
Buteo jamaicensis	red-tailed hawk	NNG, DCSS
Circus cyaneus††	northern harrier	NNG, DCSS
Elanus leucurus††	white-tailed kite	NNG
Aegithalidae – Bushtit		
Psaltriparus minimus	bushtit	DCSS
Alaudidae – Larks		
Eremophila alpestris actia†	California horned lark	NNG
Cardinalidae – Cardinals		
Guiraca caerulea	blue grosbeak	DCSS
Charadriidae – Plovers		
Charadrius vociferous	killdeer	NNG
Columbidae – Pigeons and Doves		
Zenaida macroura	mourning dove	NNG

Appendix C (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED – LONESTAR RIDGE§

SCIENTIFIC NAME	COMMON NAME	HABITAT*
VERTEBRATES (cont.)		
Birds (cont.)		
Corvidae – Jays, Magpies, and Crows		
Aphelocoma californica	western scrub jay	DCSS
Corvus brachyrhynchos	American crow	DCSS
Corvus corax	common raven	NNG, DCSS
Emberizidae – Sparrows, Longspurs, and Emberiza Buntings		
Aimophila ruficeps canescens††	southern California rufous-crowned sparrow	DCSS
Ammodramus savannarum††	grasshopper sparrow	NNG
Melospiza melodia	song sparrow	DCSS
Passerculus sandwichensis	savannah sparrow	DCSS
Pipilo crissalis	California towhee	DCSS
Pipilo maculatus	spotted towhee	DCSS
Unidentified	sparrow	NNG
Zonotrichia leucophrys	white-crowned sparrow	DCSS
Parulidae – Wood-warblers		
Dendrocia coronata	yellow-rumped warbler	
Falconidae – Caracaras and Falcons		
Falco sparverius	American kestrel	DCSS
Falco mexicanus††	prairie falcon	NNG
Fringillidae – Finches		
Carpodacus mexicanus	house finch	DCSS
Carduelis psaltria	lesser goldfinch	NNG, DCSS
Hirundinidae – Swallows		
Hirundo pyrrhonota	cliff swallow	DCSS
unidentified	swallow	DCSS
Stelgidopteryx serripennis	northern rough-winged swallow	NNG
Icteridae – Blackbirds		
Euphagus cyanocephalus	Brewer's blackbird	NNG
Sturnella neglecta	western meadowlark	NNG
Laniidae – Shrikes		
Lanius ludovicianus††	loggerhead shrike	NNG

Appendix C (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED – LONESTAR RIDGE§

SCIENTIFIC NAME	COMMON NAME	HABITAT*
VERTEBRATES (cont.)		
Birds (cont.)		
Laridae – Gulls, Terns, and Skimmers		
Larus sp.	gull	NNG, DCSS
Mimidae – Mockingbirds and Thrashers		
Mimus polyglottos	northern mockingbird	NNG
Picidae – Woodpeckers, Flickers, and Sapsuckers		
Colaptes auratus	northern flicker	DCSS
Scolopacidae – Sandpipers, and Phalaropes		
Numenius americanus††	long-billed curlew	NNG
Strigidae – Typical Owls		
Athene cunicularia†	burrowing owl	NNG
Sturnidae – Starlings		
Sturnus vulgaris	European starling	NNG
Sylviidae – Old World Warblers, and Gnatcatchers		
Polioptila californica californica††	coastal California gnatcatcher	DCSS
Timaliidae – Babblers		
Chamaea fasciata	wrentit	DCSS
Trochilidae – Hummingbirds		
Calypte anna	Anna's hummingbird	DCSS
Calypte costae	Costa's hummingbird	NNG
Troglodytidae – Wrens		
Thryomanes bewickii	Bewick's wren	DCSS
Troglodytes aedon	house wren	DCSS
Turdidae – Thrushes		
Sialia currucoides	mountain bluebird	DCSS

Appendix C (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED – LONESTAR RIDGE§

SCIENTIFIC NAME	COMMON NAME	HABITAT*
VERTEBRATES (cont.)		
Birds (cont.)		
Tyrannidae – Tyrant Flycatchers, Phoebes, and Kingbirds		
Sayornis nigricans	black phoebe	DCSS
Sayornis saya	Say's phoebe	DCSS
Tyrannus sp.	kingbird	DCSS
Tyrannus vociferans	Cassin's kingbird	DCSS
Mammals		
Canidae – Foxes, Wolves, and Relatives		
Canis latrans	coyote (scat)	NNG, DCSS
Felidae – Cats		
Lynx rufus	bobcat (scat)	NNG, DCSS
Geomyidae – Pocket Gophers		
Thomomys bottae	Botta's pocket gopher (burrows)	NNG
Leporidae – Rabbits and, Hares		
Lepus californicus bennettii††	San Diego black-tailed jackrabbit (scat)	DCSS
Sylvilagus audubonii	desert cottontail (scat, observations)	DCSS
Muridae – Rats, Mice, and Voles		
Neotoma sp.	woodrat (scat)	DCSS
Procyonidae – Racoons		
Procyon lotor	common raccoon (tracks)	DCSS

§Species list is for the entire 273-acre Lonestar Ridge site, which encompasses the 82-acre biological open space (BOS) proposed as partial mitigation for impacts associated with Otay Crossings Commerce Park.
†Denotes sensitive species observed within the BOS
††Denotes sensitive species observed outside of the BOS
*Habitat Acronyms: DCSS=Diegan coastal sage scrub, NNG=Non-native grassland, VP=Vernal pool.

APPENDIX D

SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR

Appendix D SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	**STATUS***	**POTENTIAL/HABITAT**
INVERTEBRATES		
Hermes copper (*Lycaena hermes*)	--/--	Low. Host plant spiny redberry (*Rhamnus crocea*) does not occur on site.
Thorne's hairstreak butterfly (*Mitoura thornei*)	--/-- MSCP Rare, NE	Low. Host plant Tecate cypress (*Cupressus forbesii*) is not present on site.
Riverside fairy shrimp (*Streptocephalus woottoni*)	FE/-- MSCP NE	Moderate. Has been observed in pools within project vicinity although not within the BOS. Pools within BOS may not be deep enough to support this species.
VERTEBRATES		
Amphibian		
Western spadefoot (*Spea hammondii*)	--/SSC	High. Observed in dry vernal pools during 2006 surveys on larger Lonestar Ridge property.
Reptiles		
Orange-throated whiptail (*Aspidoscelis hyperythra*)	--/SSC MSCP Covered	High in shrub habitats on site.
Coastal western whiptail (*Aspidoscelis tigris stejnegeri*)	--/--	High in shrub habitats.
Northern red-diamond rattlesnake (*Crotalus ruber ruber*)	--/SSC	Moderate in coastal sage scrub and rocky areas.
San Diego ringneck snake (*Diadophis punctatus similis*)	--/--	Moderate in grasslands or coastal sage scrub.
Coronado skink (*Eumeces skiltonianus interparietalis*)	--/SSC	High. Observed in sage scrub in off-site portions of Lonestar Ridge.
Rosy boa (*Charina trivirgata*)	--/--	Moderate near rocky areas in coastal sage scrub.
Coast horned lizard (*Phrynosoma coronatum*)	--/SSC MSCP Covered	High in coastal sage scrub. Main food source is harvester ant, which was not seen but probably is present. Observed by Dudek (1992).
Two-striped garter snake (*Thamnophis hammondii*)	--/SSC	Moderate near vernal pool habitats.
Birds		
Cooper's hawk (*Accipiter cooperii*)	--/WL	Low. Appropriate habitat does not occur on site. Observed off site in eucalyptus woodland.
Tricolor blackbird (*Agelaius tricolor*)	BCC/SSC MSCP Covered	Moderate as a winter visitor and as a migrant. Occurs mostly in grasslands and wetlands. Known from the Otay River.

Appendix D (cont.) **SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR**		
SPECIES	**STATUS***	**POTENTIAL/HABITAT**
VERTEBRATES (cont.)		
Birds (cont.)		
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	--/WL MSCP Covered	Moderate to high in coastal sage scrub. Species has been observed in larger Lonestar Ridge property, outside of the BOS.
Bell's sage sparrow (*Amphispiza belli belli*)	BCC/WL	Moderate in sage scrub and chaparral communities.
Golden eagle (*Aquila chrysaetos*)	BCC/WL Fully Protected MSCP Covered	High to forage in open or shrubby habitats. Tends to require places of solitude and is usually found at a distance from human habitation.
Ferruginous hawk (*Buteo regalis*)	BCC/WL MSCP Covered	High to forage in grasslands and agricultural fields.
Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*)	BCC/SSC MSCP Covered	Low. Appropriate habitat does not occur on site. Observed off site in Johnson Canyon.
Turkey vulture (*Cathartes aura*)	--/--	High, with foraging potential abundant.
Mountain plover (*Charadrius montanus*)	BCC/SSC MSCP Covered	Low. A rare visitor to San Diego County during winter, found in short-statured grasslands and fields.
Northern harrier (*Circus cyaneus*)	--/SSC MSCP Covered	High to forage; moderate to nest. Species has been observed off site.
Merlin (*Falco columbarius*)	--/WL	Moderate in winter on site in the open grasslands.
Prairie falcon (*Falco mexicanus*)	BCC/WL	Moderate for foraging. Species has been observed flying over the 273-acre Lonestar site.
Peregrine falcon (*Falco peregrinus*)	BCC/SE Fully Protected	Low. Rare visitor to coastal areas of San Diego.
Loggerhead shrike (*Lanius ludovicianus*)	BCC/SCC	High for foraging. Species has been observed just south of the 62-acre parcel.
Coastal California gnatcatcher (*Polioptila californica californica*)	FT/SSC	Moderate to high in sage scrub in the 20-acre parcel. Numerous off-site observations have occurred in the vicinity of Johnson Canyon.
Least Bell's vireo (*Vireo bellii pusillus*)	FE/SE MSCP Covered	Low. Appropriate habitat does not occur on site. Observed off site in Johnson Canyon.
Mammals		
California pocket mouse (*Chaetodipus californicus femoralis*)	--/SSC	Moderate in scrubby areas. Trapping necessary for detection but not warranted due to relatively low sensitivity.
Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)	--/SSC	Moderate. Coastal sage scrub and ruderal areas. Trapping necessary for detection but not warranted due to relatively low sensitivity.

Appendix D (cont.) **SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR**		
SPECIES	**STATUS***	**POTENTIAL/HABITAT**
VERTEBRATES (cont.)		
Mammals (cont.)		
Greater western mastiff bat (*Eumops perotis californicus*)	--/SSC	Moderate foraging potential in coastal sage scrub and grassland areas. Focused surveys required for detection but not warranted due to relatively low sensitivity.
Mountain lion (*Felis concolor*)	--/-- MSCP Covered	Moderate. Main prey is mule deer, which has high potential to occur on site.
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	--/SSC	High in grassland habitat on the mesa. Species has been observed in the vicinity.
San Diego desert woodrat (*Neotoma lepida intermedia*)	--/SSC	Moderate. Coastal sage scrub and other xeric areas are habitat. Trapping necessary for detection but not warranted due to relatively low sensitivity.
Southern mule deer (*Odocoileus hemionus fuliginata*)	--/-- MSCP Covered	High in grassland and sage scrub on site.
Southern grasshopper mouse (*Onychomys torridus ramona*)	--/SSC	Moderate. Could occur in arid habitats, including all shrublands. Trapping necessary for detection, but not warranted due to relatively low sensitivity.
Pacific pocket mouse (*Perognathus longimembris pacificus*)	FE/SSC	None. Occasionally found in coastal sage scrub along immediate coast. Trapping necessary for detection but not warranted, with appropriate habitat for species not occurring on site.

*Refer to Appendix E for a listing and explanation of status and sensitivity codes

APPENDIX E

EXPLANATION OF STATUS CODES FOR PLANT AND ANIMAL SPECIES

Appendix E
EXPLANATION OF STATUS CODES FOR PLANT AND ANIMAL SPECIES

FEDERAL, STATE, AND LOCAL CODES

U.S. Fish and Wildlife Service (USFWS)

FE	Federally listed endangered
FT	Federally listed threatened
BCC	Birds of Conservation Concern

California Department of Fish and Game (CDFG)

SE	State listed endangered
ST	State listed threatened
SR	State listed rare
SSC	State species of special concern
WL	Watch list
Fully Protected	Fully Protected species may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFG.

County of San Diego

Plant sensitivity:

Group A	Plants rare, threatened or endangered in California or elsewhere
Group B	Plants rare, threatened or endangered in California but more common elsewhere
Group C	Plants that may be quite rare, but more information is needed to determine rarity status
Group D	Plants of limited distribution and are uncommon, but not presently rare or endangered

OTHER CODES AND ACRONYMS

Multiple Species Conservation Program (MSCP) Covered

Multiple Species Conservation Program covered species for which the County has take authorization within MSCP area.

MSCP Narrow Endemic (NE) Species

Some native species, primarily plants with restricted geographic distributions, soil affinities, and/or habitats, are referred to as narrow endemic species. For vernal pools and identified narrow endemic species, jurisdictions will specify measures in their respective subarea plans to ensure that impacts to these resources are avoided to the maximum extent practicable.

OTHER CODES AND ACRONYMS (cont.)

California Native Plant Society (CNPS) Codes

Lists

1A = Presumed extinct.

1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing.

2 = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing.

3 = Distribution, endangerment, ecology, and/or taxonomic information needed. Some eligible for state listing.

4 = A watch list for species of limited distribution. Needs monitoring for changes in population status. Few (if any) eligible for state listing.

List/Threat Code Extensions

.1 = Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

.2 = Fairly endangered in California (20 to 80 percent occurrences threatened)

.3 = Not very endangered in California (less than 20 percent of occurrences threatened, or no current threats known)

A CA Endemic entry corresponds to those taxa that only occur in California.

All List 1A (presumed extinct in California) and some List 3 (need more information; a review list) plants lacking threat information receive no threat code extension. Threat Code guidelines represent only a starting point in threat level assessment. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Code.